

ENVIRONMENTAL ASSESSMENT

OR090-EA-00-04

A Proposal To Manage a 27-mile Loop System of Roads and Trails Within the Shotgun Drainage

NOTE: This environmental assessment includes modifications made based upon review of public comments received during the 30-day public comment period. The changes are highlighted in bold italics.

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1.0 Purpose of and Need for Action

1.1 Purpose of the Proposed Action

The MRA (McKenzie Resource Area) is proposing to manage a 27-mile motorized loop system involving mostly existing roads and trails within the Shotgun drainage. Portions of the proposed loop system have been used for organized, competitive trail events, and receive regular casual use by motorized and non-motorized trail recreationists. Off-road motorcyclists are primary users of this loop system. The purpose of this document is to analyze the effects of a designated trail system upon the aquatic and terrestrial features within the project area.

The project area includes 21,974 acres. It consists mostly of Matrix lands that will be available to timber harvest at varying levels. Located less than 10 miles northeast of Eugene/Springfield, it coincides with the project boundary defined for the Shotgun Transportation Management Planning effort. (Figure 1) (See Section 1.2). Public lands within the project area total 12,301 acres (56%). The largest private landowner within the project boundary is Willamette Industries.

1.2 Need for the Proposed Action

- C OHV (Off Highway Vehicle) activity in the planning areas has not been managed by the BLM.
- C Trail user groups have requested active trail management.
- C Construction of unauthorized, user-developed trails, and recreational use of roads constructed for timber haul continue to flourish creating an increase in resource concerns.
- C The Eugene District RMP (Resource Management Plan) (U.S. Department of Interior 1995) direction is to manage OHV use on BLM-administered land to protect natural resources, provide visitor safety, and minimize conflicts among various users (RMP , p.80).
- C The MRAMP (Mohawk Recreation Area Management Plan) direction is to work with interested user groups to help designated a multiple-use trail system.

The project area is located within a few minutes drive from numerous rural communities and municipalities. Off-highway vehicle use has occurred in the project area for decades with trail users developing their own trail network. Knowledge of area trail opportunities have expanded beyond word of mouth with internet website postings. This is drawing more people into the project area and resulting in increased

resource damage. The BLM needs to protect the natural resources while providing for OHV use.

1.3 Project Objectives

The following objectives are relevant to this EA:

- C Provide a desirable trail opportunity that (1) encourages visitor use of a designated trail system, (2) discourages construction of unauthorized trails, and (3) serves as the basis for future designated trail connections and/or trail closures.
- C Provide a designated system of roads and trails that adequately protects the surrounding natural resources.
- C Provide a designated system of roads and trails that can sustain future recreational use with reasonable maintenance measures.
- C Provide a trail opportunity that directs trail users onto lands managed by the BLM.

1.4 Relevant Planning Efforts

This EA has its origin rooted in the 1997 MRAMP. That document describes direction for management of recreation use and recreation resources administered by the BLM within a 75,753-acre area northeast of Eugene/Springfield. The 21,974-acre project

area associated with this EA is located within the northern half of the MRAMP boundary (Figure 2).

The MRAMP contains several parts. Part III, *The Management Program*, specifically describes BLM's commitment to designate a multiple-use trail system (Management Action C17). The document further describes a variety of considerations (safety, resource protection, public involvement, etc.) to be taken into account in accomplishing that goal.

A related planning effort assessed future road and trail management needs within the Shotgun drainage. A series of recommendations resulted: (1) whether a road segment is to remain open or to be closed, (2) closure type for roads deemed unneeded for administrative purposes, (3) road-to-trail conversion opportunities, (4) future road maintenance levels, and (5) maintenance actions considered necessary to correct resource-related concerns.

The Shotgun transportation management planning effort furthers the Recreation Management direction outlined in the MRAMP with its inclusion of road-to-trail conversion opportunities.

This EA is tiered to the ROD (Record of Decision) for Amendments to Forest Service and BLM Planning Documents within the Range of the Northern Spotted Owl (U.S. Department of Agriculture and U.S. Department of Interior 1994). It is also tiered

to the Eugene District ROD and RMP.

1.5 Decisions to be Made

The decision maker will render the following decisions upon considering the history of the project area; findings generated from project scoping; relevant issues; and the physical, biological, and social consequences described for each project alternative:

- C A determination as to whether the selected alternative would have significant environmental impacts not already addressed in the ROD for Amendments to Forest Service and BLM Planning Documents within the Range of the Northern Spotted Owl (Department of Agriculture and U.S. Department of Interior 1994) and the Eugene District ROD and RMP.
- C A determination as to whether the selected alternative would constitute a major Federal action having a significant effect on the human environment.
- C The location and range of road-to-trail conversion miles that would be implemented as part of the selected alternative.
- C The location and number of stream crossings that would be constructed as part of the selected alternative.
- C The location and miles of new trail construction.

- C The location and miles of roads and trails designated for motorized recreational use within the Shotgun drainage.

1.6 Project Scoping

Project scoping associated with the MRAMP, a Recreation planning document that emphasized OHV management, represents the initial scoping effort linked to this project.

Additional public scoping was conducted in 1998 during the Shotgun transportation management planning effort, and continued throughout development of this project EA that began in January 1999. Known user groups that utilized trails within the Shotgun area, involved private landowners, local equestrians, and other interested citizens were invited to attend a series of public meetings. These meetings were intended to solicit input regarding future management of roads and trails within the Shotgun drainage. Field trips and newsletter articles informing the general public of the project status also occurred.

Copies of the scoping mailing lists and project files documenting project scoping efforts are located in the Eugene District Office, 2890 Chad Drive, Eugene, Oregon.

1.7 Project Issues

Internal and external scoping resulted in the development and subsequent

interdisciplinary analysis of the following relevant issues:

1. What are the effects of trail designation (e.g., signing), use, construction, and maintenance on Federally-listed threatened or endangered species?

Trail designation may invite more users to the area than would come under the current situation. This could increase the amount of noise disturbance to the bald eagle and northern spotted owl. Trail use could result in loss of adjacent vegetation, other habitat modifications, and/or increased sedimentation affecting spring chinook salmon. Trail maintenance could affect species by its timing, resulting vegetative removal, and/or other ground-disturbing activities.

2. How will trail designation (e.g., signing), use, construction, and maintenance affect BLM's ability to attain ACS (Aquatic Conservation Strategy) objectives (Appendix B).

Trail use and maintenance could affect water quality through soil displacement and increased sediment delivery to stream channels. Riparian communities could be affected if the trail lies within riparian areas. Attainment of other ACS objectives may be affected.

3. How will trail designation (e.g., signing), use, construction, and maintenance affect user safety?

Trail recreation safety concerns exist given the absence of trail signing and some existing trail conditions. Additionally, the proposed designated system includes portions of roads that would remain open to other uses (e.g., driving-for-pleasure, timber haul, etc). This could create situations in which user safety may be affected.

4. How will trail designation (e.g., signing), use, construction, and maintenance affect the quality of the user experience?

The Shotgun-area user experience is based upon a substantially modified environment, easy access, absence of amenities, and few site controls of users. Future management could alter the facility and setting characteristics familiar to area users.

5. What are the effects of trail designation (e.g., signing), use, construction, and maintenance on different trail user groups and other recreationists?

Historic trail use of the area was largely defined by user actions. This enabled different types of trail users to access a variety of areas with little restriction. Vehicle limitations, topography, and/or lack of area

knowledge were often the only limiting factors to trail use of the area. Future trail management activities could result in restricted use of some trail segments to certain trail uses. It could also impact other non-trail recreation activities.

Additional issues emerged through scoping efforts *that were determined to be minimally affected or not at all affected under the alternatives described*. Issues considered, but eliminated from detailed analysis are listed below:

C How will trail designation, use, construction, and maintenance affect BLM's timber production?

Explanation: Projected impacts on BLM's future timber production *would* be negligible. *Trail use would not affect overall stand productivity because very little of the proposed system involves new trail construction.*

C What are the effects of trail designation (e.g., signing), use, construction, and maintenance on S & M (Survey and Manage) species?

Explanation: *Regional protocol was followed in conducting surveys for S & M species.* Existing road and trail segments of the proposed designated system are not considered suitable habitat for S & M plant (i.e., fungi, bryophytes, and lichens) and wildlife species (i.e., red tree vole and mollusks [blue-gray tail-

dropper, papillose tail-dropper, Oregon megomphix, Crater Lake tightcoil]); therefore, no surveys were conducted in those locations.

In areas of proposed new construction where suitable habitat was identified, surveys were done in 1999 for bryophytes, lichens, and mollusks. None were found. No red tree vole surveys were conducted in new construction areas because the proposed ground-disturbing activity (i.e., trail construction) would not remove or modify the conifer canopy structure of the stand or individual conifer crowns in suitable habitat.

Fungi surveys were not conducted in areas of proposed new construction because those areas are not considered suitable habitat.

Conifers could be removed during culvert removal, consequently, surveys for red tree voles and S&M fungi, bryophytes, and lichens were conducted March 2000; no red tree vole nests nor S&M fungi, bryophytes, or lichens were found at those locations.

Because no known sites for S&M species were identified during surveys conducted prior to ground-disturbing activities, management of these species does not need to be addressed in the action alternatives. Therefore, S & M fungi, bryophytes, lichens, red tree voles, and mollusks will not be analyzed further in this document.

C *What are the effects of trail designation, use, construction, and maintenance on the germination and spread of non-native weed species?*

Explanation: While off-road motorcycles (and other trail uses) may serve as vectors, the majority of the proposed loop system would be in shaded areas, not viewed as high probability germination areas.

*Vehicles commonly serve as a vector for the spread of weeds. Vehicles pick up weed seeds in tire treads then move to another area, disturb the ground and create an ideal bed for the seeds they carry. In the Shotgun area, Scotch broom (*Cytisus scoparius*) is the primary weed problem, occupying large areas of land, shading out native plants and planted trees.*

2.0 Alternatives Including the Proposed Action

2.1 Introduction

This chapter describes the “no action” alternative and 2 action alternatives developed by the project interdisciplinary team (IDT). A comparison table of alternative features is displayed in this section following descriptions of all alternatives.

2.2 Alternative I: Agency Trail Management, Single-Track Construction (Proposed Action)

This alternative would designate a 27-mile system of paved (11%), compacted gravel (57%), and dirt surfaces (32%) for motorized recreational use (Figure I). It would include segments located on public lands managed by the BLM, and where approved by the landowner, segments located on private lands managed by Willamette Industries. Trail identification signs would be installed along the designated system. The signs’ appearance would be subservient to the surrounding natural resources. The target user of the designated system would primarily be off-road motorcyclists.

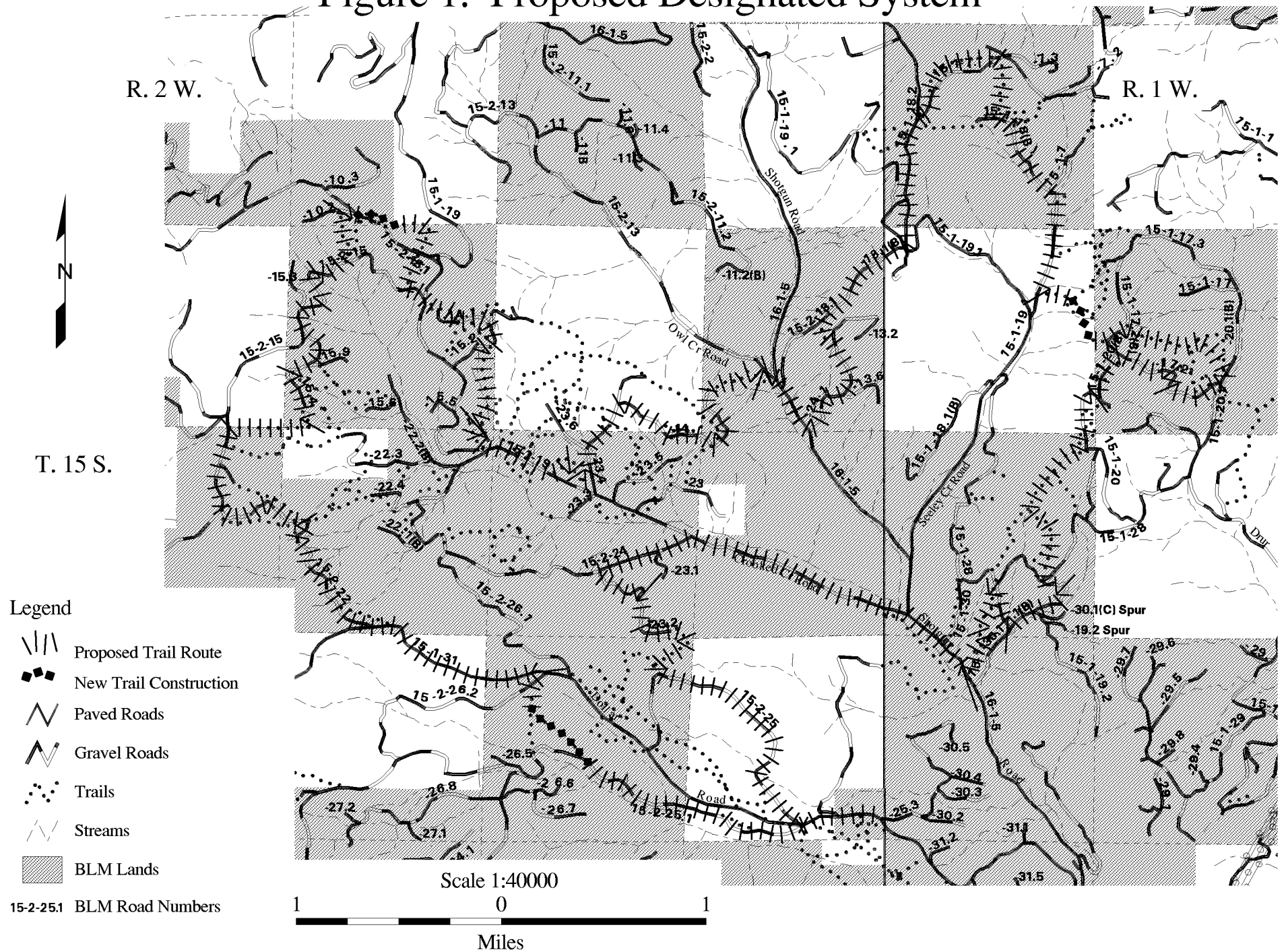
The designated system would include new trail construction totaling less than 1 mile within routes 1, 2, and 4 (Figure I). No

trees greater than 8 inches in diameter would be felled.

Several of the recommended road-to-trail conversions identified during Shotgun Transportation Management planning would be implemented. *These conversions total approximately 4 miles. Some road-to-trail conversions would result in reduced tread width no wider than 24 inches on average (i.e., BLM Roads 15-2-22 and 15-1-18B); other road-to-trail conversions would not include width reduction (i.e., BLM Roads 15-2-10.2, 15-2-14.1, 15-2-14B, 15-2-13.1B, 15-1-17.2B, 15-1-20B, and 15-1-30.1B).* In all cases, access would be closed to 2-track vehicles and single-track structures (i.e., bridges) would be constructed to allow for authorized trail access where culverts would be removed.

Construction of single-track structures where trails currently do, or would (via road-to-trail conversion), intersect stream crossings would serve to keep trail users above the high water mark. These structures would span 8 - 20 feet in length. Their construction would occur during periods of dry weather *and low stream flows. Additional practices could include the use of silt fences, filter fabrics, graveling of crossing approaches, geotextiles, or a combination of these or similar techniques.* Hand or power hand tools would be primarily used during stream crossing construction. Occasional use of mechanized equipment may be required for transport of heavy materials.

Figure 1. Proposed Designated System



Maintenance of the designated system's trail segments would occur at least once a year, and would be based upon condition survey information. Condition surveys would include inspection of trail tread, drainage features, stream crossings, etc. Normal trail maintenance would include removing trees that have fallen across trail segments, cleaning existing drainage features, repairing or replacing structures, etc. Maintenance of features associated with streambanks or channels would not create disturbance beyond that encountered during the initial installation. Maintenance would be conducted during dry weather.

Road segment maintenance would be handled through BLM's normal road maintenance program. Road maintenance levels, as described in the resource area's current RMOP (Road Maintenance Operations Plan), would be adhered to as the basis for maintaining road segments included within the designated system. Extraordinary situations that result in degradation of the designated system (e.g., floods) would be handled as expeditiously as funds and other resources allow.

Mitigations would apply under this alternative in order to minimize disturbance to Northern spotted owls in the Unmapped LSR. The suitable habitat within the Unmapped LSR that is within 0.25 mile of the trail system proposed for management would be surveyed at the beginning of the breeding season every year. If owls are found nesting in this habitat, trail segments located within 0.25 mile radius of the Unmapped LSR would be closed to organized,

motorized OHV events during the critical nesting period (i.e., March 1 - July 15). If for some reason spotted owl surveys are not conducted in the Unmapped LSR in a given year, no permits would be granted for organized, motorized recreational events proposed within 0.25 mile of the Unmapped LSR during the critical nesting period of that given year. Seasonal use restrictions would not apply to casual OHV use within 0.25 mile of the Unmapped LSR.

BLM would work cooperatively with Willamette Industries to manage segments of the designated system that are located on lands owned and managed by Willamette Industries. For example, trail use would be discouraged on private lands (e.g., signing, blocking, trail obliteration) where non-designated trail segments connected to the proposed designated system access areas where Willamette Industries has specified a desire for no motorized trail activity. Additionally, BLM would seek to establish a written agreement with Willamette Industries addressing aspects of public use, signing, and maintenance of trail segments on lands owned by Willamette Industries.

2.3

Alternative II: Minimal Trail Use Modification (No Action)

The current status of motorized and nonmotorized recreational use within the boundary of the MRAMP would continue under this alternative. While no officially-

designated system would result, recreational use of the area's roads and trails would continue, spurred by word-of-mouth and website postings. Road-to-trail conversions associated with a designated trail system would not be implemented under this EA. Regular trail maintenance by the BLM would not be a scheduled nor budgeted activity. Some unauthorized maintenance would be conducted opportunistically by trail users. Road maintenance would be handled through BLM's normal road maintenance program. Road maintenance levels, as described in the resource area's current RMOP, would be adhered to as the basis for maintaining road segments within the project area.

BLM would not implement new trail construction designed to circumvent resource problem areas. Similarly, bridge construction designed to elevate trail users above streams would not be conducted by the agency under this EA.

2.4 Alternative III: Agency Trail Management, Dual-Track Construction

This alternative would retain a 4X4 recreational opportunity *along BLM Road 15-2-22*. *This road is* known to be used by 4X4 enthusiasts. *Alternative III is identical to* Alternative I, the Proposed Action, with the following exception:

Road Status

- C BLM Road 15-2-22 would be maintained at a Maintenance Level 2 (*Appendix C*). Culverts within the road prism would be replaced, and a *drainage* concern (located 0.8 mile beyond the junction with BLM Road 15-1-31) would be addressed. Tread width would not be reduced.

2.5 Alternative Eliminated From Detailed Study

The previous alternatives represent a range of reasonable alternatives analyzed by the IDT. In addition, another alternative was considered and later eliminated from detailed study. *This alternative involved a 35-mile system of roads and trails used in the past for competitive OHV events.* It includes approximately 10 miles of road and trail segments located, in part, on private lands.

As a result of communications between the IDT and the involved private landowners, it became evident that those segments were not feasible candidates for inclusion in a designated system since the private landowner did not support this action. Consequently, the segments were dropped from further consideration and reroutes to nearby, existing trail and/or road segments were pursued by the IDT.

TABLE 1. Comparison of Attributes Featured Under the Three Project Alternatives.

FEATURE	ALT. I (Proposed Action)	ALT. II (No Action)	ALT. III
Designated system miles	appx. 27	0	appx. 27
Road-to-Trail Conversion miles	4	0	2.7
New trail construction miles authorized by the BLM	<1	0	<1
BLM Rd. 15-2-22	Road-To-Trail Conversion. Tread width reduced to single track (appx. 24"). No 4X4 use allowed.	Road-To-Trail conversion, as identified during in Shotgun Transportation Mgmt. Planning, would not be done under this EA.	No Road-To-Trail conversion. Road maintained at a Maintenance Level II. No change in tread width. Permitted 4X4 use.
Trail Maintenance	BLM would budget for, and schedule, routine maintenance.	No maintenance would be conducted by the BLM.	Same as that described for Alt. I.
Cooperative system management	BLM would seek to maintain system corridors located on private lands, and discourage motorized trail use where it is not wanted by the private landowner. A formal basis for cooperative system management would be undertaken.	No formal basis for cooperative system management would result.	Same as that described for Alt. I.

3.0 Affected Environment

3.1 Introduction

This chapter presents a description of relevant resource components of the existing environment. It describes baseline information specific to the terrestrial, aquatic, and human elements that comprise the project area.

Information presented within this chapter is arranged in the following sequence:

Introduction (3.1), Wildlife (3.2), Botany (3.3), Fisheries (3.4), Hydrology and Soils (3.5), and Recreation (3.6).

3.2 Wildlife (Issues 1 and 2)

3.2.1 Bald Eagle (Issue 1, T & E Species)

A 75-acre portion of the Coburg Hills Bald Eagle Habitat Area (BEHA) is within 0.25 mile of the roads and trails proposed for management (Figure 2). This portion, known as Area K, consists of a stand of 50- year-old conifers with a patch of scattered 190-year-old trees. Area K is not considered suitable nesting habitat because it is greater than one mile from a large body of water. Winter surveys were conducted in Area K in 1987 and 1989. Although eagles were observed in a few instances perching for short periods on specific trees in these areas, roosting was never confirmed.

3.2.2 Northern Spotted Owl (Issue 1, T & E Species)

There is no designated Critical Habitat Unit for Northern Spotted Owls within or adjacent to

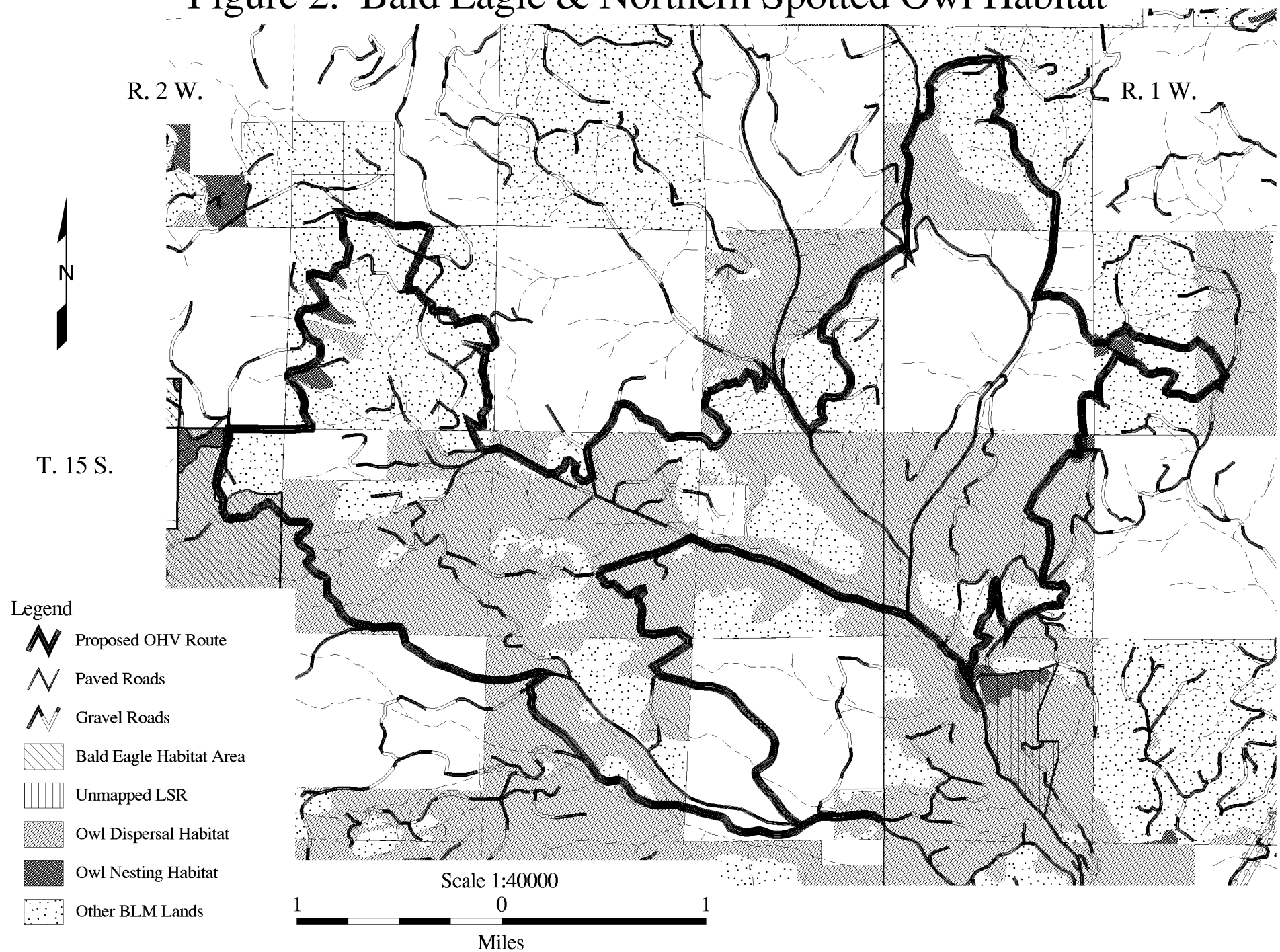
the area of the proposed route. There is a 116-acre Unmapped Late Successional Reserve (LSR) adjacent to the proposed route (Figure 3). This LSR was established around a spotted owl site center originally identified in 1987. A total of 0.7 mile of existing trail and road proposed for management are within 0.25 mile of this LSR. Approximately 0.2 mile of this segment of the proposed route are currently paved, 0.1 mile are graveled road, and 0.4 mile are existing, user-defined trails.

Suitable nesting habitat for the northern spotted owl is mature forest (generally greater than 80 years old) with high percentage of canopy closure, an open understory, large diameter down logs, and large diameter snags.

Currently, there are 21 acres of suitable nesting habitat and 91 acres of dispersal habitat within the LSR. Across the project area there are fragmented patches of suitable nesting habitat totaling approximately 150 acres. The patches occur within 0.25 mile of the proposed designated system, but are outside the LSR.

No spotted owl nest sites have been recorded within 0.25 mile of the network of roads and trails proposed for management. No owl use or activity has been documented within the LSR since the original site center was established. The owl pair in the area has been surveyed annually since 1987. This owl pair has a history of nesting and having activity centers outside of the LSR. All successful nest sites for this owl pair (recorded in 1994, 1996, and 1997) have been more than 0.9 mile from the Unmapped LSR. Activity of single owls was recorded once per year in 1990, 1992, and 1996 within 0.25 mile of the LSR.

Figure 2. Bald Eagle & Northern Spotted Owl Habitat



3.2.3 Aquatic Habitat (Issue 2, ACS Objectives 1, 2, 8, and 9)

The aquatic environments adjacent to the proposed route provide habitat for many amphibian species. Breeding habitats in the project area for aquatic-breeding amphibians may include bogs, ponds and slow-moving streams.

The roads in the route proposed for management contain a number of log and metal culverts that are in varying degrees of repair. The culverts provide habitat and stream crossings for aquatic vertebrates and invertebrates. Many of the log culverts are failing because of decay which is causing sediment delivery to streams.

3.3 Botany (Issues 1 and 2)

3.3.1 T & E Plants (Issue 1)

Surveys for T & E plants were done for the proposed designated system. No T & E plants were found. Therefore, T & E plants will not be analyzed in this document.

3.3.3 Aquatic Habitat (Issue 2, ACS Objectives 1, 2, 8, and 9)

The proposed system passes through upland and riparian habitats. Much of the riparian and aquatic plant communities have been disturbed by logging in the past. The species composition of the riparian areas is largely determined by the overstory cover. Where streams move through clearcuts and along roads, the species composition contains more non-native plant species (e.g., blackberries, scotch broom)

compared to forested habitats where the species

composition consists of native riparian vegetation.

3.4 Fisheries (Issues 1 and 2)

Anadromous fish (e.g., spring chinook salmon, steelhead, and pacific lamprey) use the Mohawk basin to varying degrees. Steelhead are the most widespread and use most streams with <7% gradient. This includes all of the major Mohawk tributaries including Cash Cr., Drury Cr., and most of the Shotgun Cr. sub-basin. Spring chinook salmon (listed as a *Threatened* species under the ESA) are the most restricted using streams <3% gradient. The only tributary in the analysis area known to have salmon habitat/use is Shotgun Creek. Because salmon usually spawn in September, access to spawning grounds is often limited by low flows and warm temperatures in the lower Mohawk river.

Spring chinook salmon have historically used the Shotgun Creek mainstem for spawning. Their habitat is believed to extend to approximately the confluence with Seeley Creek. Rainbow and cutthroat trout use Shotgun, Crooked, Seeley, and Owl Creeks. All stream crossings are at locations above the extent of anadromy. These crossings are between 1.25 and 4 miles from the nearest spring chinook habitat, and between 100' and 1.25 miles from any resident fish habitat. ***Streams intersecting the proposed designated route are not fish bearing.***

3.5 Hydrology and Soils (Issue 2)

3.5.1 Streambank and Channel Conditions (Issue 2, ACS Objective 3)

ACS objective number 3 deals with the physical integrity of the aquatic system which includes streambanks and channels. Along the proposed 27 mile trail route there are 4 channel or draw crossing sites.

A crossing near Owl Creek and an un-named tributary to Crooked Creek are perennially flowing systems. The site near Owl Creek is a relic portion of Owl Creek proper which was isolated during past road building in the area. The active channel width is roughly 20 feet and the bankfull width is about 50 feet. Stream flow at this location is related to the volume of water flowing through Owl Creek. Estimated depth of water during high stream flows is less than 1.5 feet.

A site near Owl Creek is used by motorcyclists as a drive-through crossing. Logs placed along the southern part of the stream are arranged side-by-side in corduroy fashion. Stream bottom materials range in size from bedrock to small gravels. Streamside vegetation occurs along locations adjacent to the crossing. Streambank soils along the southern approach to the crossing show evidence of use during saturated conditions leading to bank erosion and soil displacement.

The un-named tributary to Crooked Creek is crossed with a plank bridge. High flows pass around, and possibly over, the plank bridge. Some streambank erosion and degradation occurs from trail use during saturated soil conditions. Stream bottom materials are gravel

and smaller sized constituents. Streamside vegetation exists along locations adjacent to the crossing.

A small, ephemeral, un-named headwaters tributary to Crooked Creek has no bridge and is crossed by driving through the channel. Active channel width is about 18 inches, but flows are sufficient at some time in the year to cause channel scour at the crossing and deposition downstream. Stream bottom materials are gravel sized with larger materials both upstream and downstream from the crossing. No evidence of channel or bank problems exist.

The crossing in the northern headwaters of Seeley Creek is located at the site of a failed log-culvert. The flow characteristics at this site are unknown. Banks are steep, un-vegetated, and relatively unstable. Trail users ride around the inlet side of the old culvert and disturb the fill and banks surrounding the location.

3.5.2 Water Quality (Issue 2, ACS Objective 4)

ACS objective number 4 deals with water quality integrity necessary to sustain healthy aquatic and associated systems. Typical measures of water quality include stream temperature, sediment load, and turbidity. A complete description of stream temperature dynamics for the Mohawk River system is given in the Mohawk River Watershed Assessment (NRCS 1999) and the Mohawk/McGowan Watershed Analysis (BLM 1995).

Sediment from natural events and human

activities directly access aquatic systems in the proposed project area. Naturally caused soil movement and landslides occur in the area and introduce sediment directly to streams or indirectly from the road network. There is evidence throughout the project area which shows streambank disturbance by trail users introducing sediment directly to streams at crossings. It is unknown how much sediment is introduced at each crossing, or as a whole in the project area, on an annual or individual event basis. Evidence shows trail use along steep or sustained grades leads to soil displacement and movement downhill to roads or road ditches. This occurrence eventually contributes some part of the sediment to a water source.

Turbidity is associated with the introduction of silt and clay sized materials into water systems from trails and roads. Given the fine-textured soils in the project area, turbidity is temporarily elevated at any location where sediment is deposited in or near streams. No data exist to quantify turbidity at stream crossings or sediment contribution areas. It is assumed that natural turbidity levels are low.

3.5.3 Sediment (Issue 2, ACS Objective 5)

ACS objective number 5 deals with the sediment regime under which the aquatic systems evolved. As stated in ACS objective number 4, no data exist to quantify sediment at any given location or for an estimation of annual rate of deposition. However, estimates for historical soil loss calculated from volumetric determination of soil displacement along all natural surface trails show a large amount of material was transported off site.

Soil displaced along the trail routes almost exclusively falls within the size range from sand to clay. In other words, soil loss and transport due to water movement, gravity, and or mechanical disturbance tends to be the finest and easiest materials to displace.

Approximately 300 water diversion features were installed during 1999 by the BLM along approximately 25 miles of the proposed designated system to minimize soil displacement.

3.5.4 Stream Flows (Issue 2, ACS Objective 6)

ACS objective number 6 deals with stream flow characteristics and its relationship to other physical parameters. The Mowhawk River Watershed Assessment (NRCS, 1999) and the Mohawk/McGowan Watershed Assessment (BLM, 1995) provide detailed descriptions of streamflow dynamics within the Mohawk River watershed. No data exist for individual streams tributary to the Mohawk River inside the proposed project area.

The flow data for the Mohawk River were recorded near Springfield, Oregon about 15 stream miles downstream from the proposed project area. The smaller headwaters tributaries and streams in the Shotgun Creek area are probably more receptive to smaller, isolated precipitation events and show some local variation to the patterns displayed at the gaging station.

Peak flow data summarized in the MRWA (NRCS, 1999) and MM (BLM, 1995) suggest no trend or pattern is discernable related to

sources other than annual precipitation. Timing of peak flows is directly related to intense precipitation events which typically occur between November and March in any given year.

3.5.5 Wetlands (Issue 2, ACS Objective 7)

ACS objective number 7 deals with the relationship between streamflow and wetlands systems. No classifiable wetlands exist immediately adjacent to the proposed trail route. However, several portions of the trail do exist within riparian reserves and are within the stream influence zone. Two sites are located along the first order tributaries to Cash Creek with trail segments located near (within 200 feet), but outside, the flood plain.

3.6 Recreation (Issues 3, 4, and 5)

3.6.1 User Safety (Issue 3)

3.6.1a. Trail Signing/Information Material

Trail use within the project area incorporates minimal safety measures beyond good judgement exercised by the visitor. Project area trails are not signed nor is information material (e.g., maps, brochures, etc.) made available to the visitor to assist him/her determine whether he/she possesses the necessary skills to successfully maneuver area trails. In the absence of trail signing, visitors new to the area are commonly discouraged from exploring trails beyond those immediately surrounding informal staging areas (i.e., resting and/or unloading areas where visitors commonly begin their trail experience) for fear

of getting lost. Although the project area is highly dissected with signed roads, the combination of few distinct landscape features and the abundance of unmarked trail junctions could easily disorient visitors having little area familiarity.

3.6.1b. Water Diversion and Water Crossing Features, User Installed

There are roughly 50 user-designed and installed water-diverting features (e.g., waterbars and check dams) in various states of decomposition and effectiveness along trail segments of the proposed designated system. The installation of these features by trail users was intended to stem rutting or erosion that can pose hazards to trail users or altogether eliminate useable surface tread.

User-designed and constructed stream crossings are additional features included within trail sections of the proposed designated system. The structures, installed to reduce sediment displacement, also allow safe passage through stream channels. They consist of a corduroy arrangement of on-site logs arranged side-by-side perpendicular to a stream channel, and a simple plank crossing constructed of untreated lumber. Long-term safe use of these structures by trail users was not anticipated.

3.6.1c. Water Diversion Features, BLM-Installed

BLM contracted for the installation of water drainage features (i.e., check dams and waterbars) on trail segments located within the project area in 1999. Approximately 25 miles of the proposed designated system had water drainage features installed using treated

materials and U.S. Forest Service designs. Although the primary purpose of this action was to reduce soil displacement, the water drainage features also provide tread protection.

3.6.1d. Roads

The proposed designated system has approximately 3 miles of paved road, 15 miles of gravel road, and 9 miles of dirt-surfaced roads and single-track trails. The gravel and paved portions are used by trail enthusiasts to tie into the next dirt trail portion of the proposed route.

Paved roads within the project area are single-lane hauling roads with turnouts. They are paved to minimize road maintenance associated with timber harvest activities. Paved roads are considered main lines and receive the heaviest commercial hauling. Public use of paved roads is secondary and was not a priority for their design. Characteristics of these roads include limited sight distance, few warning signs, unmarked speed limits, and no center lines. Opposing traffic can appear on these roads at any time; in which case, vehicle access to turnouts is critical. Compared to gravel- and dirt-surfaced roads, public use of paved roads within the planning area is highest because they are most similar to state and county roads. The design standards are very different, however, and necessitate public vigilance and moderation in speed. Vehicle speeds greater than 35 miles-per-hour exceed the design standards. All paved roads within the project area are maintained at a Maintenance Level 4 or 5 (Appendix C).

Gravel-surfaced roads within the project area

have a wider range of prescribed maintenance levels. The condition of the gravel roads varies with their prescribed maintenance level. Most of the gravel roads are maintained for year-round commercial and administrative access at a Maintenance Level 3, 4 or 5. Similar to paved roads within the project area, public use of these roads is secondary *to commercial haul* for their design and function. Gravel-surfaced roads can be negotiated by passenger cars traveling at prudent speeds. A small portion of the project area's graveled roads, where expected use is limited, are in a Maintenance Level 2 category. These roads are often overgrown with brush; however, use is possible with high-clearance vehicles (e.g., 4WDs). Use by 2-wheel-drive passenger vehicles or low clearance vehicles is not recommended, although no warnings are posted.

Maintenance levels prescribed for dirt-surfaced roads within the project area vary from Maintenance Level 2 to 3. For commercial and administrative uses, dirt roads are considered seasonal in use.

3.6.2 Quality of the User Experience (Issue 4)

The presence and growth of motorized recreational activity within the project area stems not from BLM design and encouragement; instead, visitors have discovered for themselves a substantially modified landscape that is highly compatible with their desire for a trail experience opportunity. The project area includes variety of tread (e.g., single track, double track, dirt surface, compacted rock surface, etc.) and

vegetation (e.g., meadows, clearcuts, second-growth tree stands, riparian communities, etc). It offers highly challenging and technical segments (e.g., curves, twists, steep grades, rocky tread, etc.). On-site control of users--other than blocked roads and trails--is minimal. Conventional motorized access is abundant. Staging and dispersed camping locations that provide opportunities for visitors to develop a sense of independence and freedom are readily available. Few site developments are present creating a need for visitors to exercise their own skills and resources.

Surrounding rural communities offer amenities that further support a positive recreational experience for the visitor. Items such as gasoline, groceries, area maps, beverages, etc. are readily available for purchase from local businesses.

3.6.3 Different User Groups (Issue 5)

The project area sustains a variety of motorized and nonmotorized trail recreation. Excluding equestrian use which is limited to local, rural residents, trail use within the project area expands beyond surrounding rural residents to include urban visitors from Eugene/Springfield. These visitors, and those from other rural, Oregon communities, join local residents in multiple trail recreation pursuits: off-road motorcycling, mountain biking, 3- and 4-wheeling (ATVs), horseback riding, and 4-wheel driving.

Many of the shared trails within the project area were originally constructed as roads for timber harvest. Compared to single-track trails having tread widths as narrow as 12

inches, these wider corridors--when combined with adequate vegetative clearances and grades--are used by 2 or more different types of trail users. In particular, 4WD use has grown within the project area because of the presence of old roads.

Informal staging areas within the project boundary pose unique concentration centers that attract different trail users. These sites are associated with "play areas" where riders build their skills, warm up before tackling challenging trails, playfully sport around, and/or socialize with others. It is common to see a mix of different users at these sites simultaneously.

Trail recreation is typically a social activity. Visitors come in groups for reasons of safety and the inherent nature of trail recreation. Groups range from informal clusters of family and friends to chartered organizations seeking to promote a particular type of trail use. Some of the latter groups have sought authorization from the BLM and private landowners to host competitive trail recreation events in recent years. They utilized trails, roads, and/or informal staging areas for 4WD, motorcycle, and mountain biking events. Organized events have attracted participants from throughout the western United States and Canada; large spectator turnout, sponsorship, and media attention have commonly accompanied them.

3.7 Cultural Resources

Surveys conducted in the 2 areas proposed for new trail construction showed no evidence of the existence of cultural resources.

4.0 Environmental Consequences

4.1 Introduction

This chapter presents a description of probable consequences of each alternative on selected environmental resources and human activities as they relate to the relevant issues described in *Chapter 1.6, Project Issues*. It serves as a scientific and analytic basis for comparison of the alternatives described in Chapter 2.0, *Alternatives Including the Proposed Action*.

Effects described within this section will be presented as *direct*, *indirect* or *cumulative*. *Direct effects* are caused by the action described under each alternative, and occur at the same time and place. *Indirect effects* are caused by the described action and occur later in time or farther removed in distance; they remain reasonably foreseeable. *Cumulative effects* are impacts which result from the incremental impact of the described action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

The effects discussion is organized in the following sequence: T & E Species (4.2), ACS (4.3), Recreation (4.4), and Other Resources (4.5).

4.2 Effects on T & E Species (Issue 1)

4.2.1 Alternative I: Agency Trail Management, Single-Track Construction (Proposed Action)

4.2.1a Direct and Indirect Effects on the Bald Eagle

There would be no short-term effects to nesting bald eagles due to disturbance because currently there is no suitable nesting habitat within Area K of the Coburg Hills BEHA and other locations within the project area. There would be no short-term effects to roosting bald eagles due to disturbance because eagles are not currently roosting in Area K or in any other locations within 0.25 mile of the roads and trails proposed for management.

If bald eagles begin using Area K of the BEHA as a winter roost at some point in the future, the proposed project could disturb bald eagles during the wintering period (Nov. 15 - March 15). Potential effects of disturbance would be reduced because of three factors: (1) the road bordering Area K is currently a graveled BLM road that is open to use and has vehicle traffic in the winter months, so if eagles started using Area K for roosting they would already be subject to disturbance from vehicles, (2) the trail system proposed for management would not be visible to eagles utilizing Area K for roosting because of steep topography, and (3) the topographic breaks could reduce noise disturbance to Area K.

4.2.1b Cumulative Effects on the Bald Eagle

The Bald Eagle Recovery Plan (US Fish and Wildlife Service, 1986) is intended to maintain population viability of bald eagles in 7 western states, including Oregon. . BEHAs on the Eugene District are designed to provide sufficient habitat to meet the local goals in the Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service 1986). The number of active breeding territories for bald eagles in the Willamette Basin Recovery Zone have increased over the last decade. Future projects and currently foreseeable projects on the Eugene District would have no cumulative negative effects on these BEHAs.

Private lands both within and outside of the project area potentially provide suitable habitat for this species. It is likely that this habitat could be modified in future actions on these lands.

Habitat outside of Eugene District BEHAs would be managed in accordance with the Northwest Forest Plan and Eugene Resource Management Plan (U.S. Department of Interior 1995). Although management activities outside of BEHA's on BLM land could negatively affect suitable habitat, cumulatively land management over the entire District would not negatively affect the viability of bald eagle populations.

4.2.1c Direct and Indirect Effects on the Northern spotted Owl

Surveys for Northern spotted owls would be conducted annually that are consistent with USFWS (United States Fish and Wildlife Service) protocols to determine occupancy and reproductive status within suitable nesting habitat within the Unmapped LSR. Nesting owls within

0.25 mile of the proposed trail system would not be affected by disturbance created by organized, motorized recreational events during the critical nesting period (March 1 to July 15) because seasonal restrictions would be required at this time if owls were nesting or if nesting status was undetermined. Nesting owls within 0.25 mile of the trail system proposed for management could be directly affected due to disturbance by organized, motorized recreational events during the remainder of the nesting period (July 15 - Sept. 30) because no seasonal restrictions would be required.

Nesting owls within 0.25 mile of the trail and road segments proposed for management could be affected by disturbance created by casual OHV use in suitable habitat during the nesting season (March 1 - Sept. 30) because seasonal restrictions would not be required for casual OHV use. Noise disturbance created by casual use of OHVs currently exists on the road and trail segments proposed for management. If official management of the trail system is implemented, only a minimal increase in ambient noise created by casual OHV use is expected, thus the potential effects of casual OHV use to nesting owls could be small.

A portion of graveled BLM Road 15-1-30.1 (Figure 1) would be converted to a trail under this alternative. This road is approximately 0.4 mile from Shotgun park and is used intermittently by dual-track vehicles. Converting this road to trail could reduce disturbance by dual-track vehicles to 12 acres of suitable spotted owl habitat within the Unmapped LSR (Figure 3). Northern spotted

owls, if present, could indirectly benefit from this action

There would be no indirect effect due to habitat modification as the proposed action would not result in modification of spotted owl nesting habitat. No trail construction would occur within suitable nesting habitat and no suitable nesting habitat would be modified under this action alternative.

Approximately 0.4 mile of trail construction would occur in dispersal habitat. This construction would consist of clearing brush and removing limbs from the lower portions of some trees in dispersal habitat, but no dispersal habitat would be degraded or removed.

4.2.1d Cumulative Effects on the Northern Spotted Owl

The management of forests on BLM and Forest Service lands within the range of the Northern spotted owl is detailed in the NFP (Northwest Forest Plan). This plan is designed to maintain species viability and provide for the recovery of the Northern spotted owl. All current and foreseeable actions on the Eugene District BLM land would meet the Standards and Guidelines directed by the NFP and RMP. Private lands both within and outside of the project area potentially provide suitable habitat for the Northern spotted owl. It is unlikely that this habitat could be modified in future actions on these lands.

The management of a designated trail system for motorized vehicle use proposed in this document and the associated casual use of OHVs could

effect potentially nesting spotted owls in suitable habitat within the LSR and elsewhere within 0.25 mile of the trail system.

Conversely, future road closure actions proposed on the McKenzie Resource Area could potentially reduce noise disturbance to suitable and dispersal habitat within and adjacent to the LSR. Long-term management of a trail system for motorized recreational use within the Shotgun area could indirectly benefit spotted owls by potentially reducing the mileage of trails used by OHVs and associated disturbance.

Current and future projects across the checkerboard pattern of BLM and private landownership could negatively affect individual spotted owls and/or their habitat, but cumulatively, since Eugene District BLM lands would be managed for the recovery of this species, these actions would not negatively affect the viability and recovery of the Northern spotted owl.

4.2.1e Direct and Indirect Effects on Spring Chinook Salmon

No direct effects are anticipated under Alternative I. Spring chinook salmon habitat is at least 1.25 miles downstream from any stream crossing activities.

Indirectly, there would be a short-term increase in sediment delivery to streams from culvert removals. However, ground disturbance associated with the removal or replacement of culverts combined with the distance from potential salmon habitat, would make it unlikely that the actions would affect salmon. Design and construction of new

stream crossings, along with regular maintenance, would insure that effects to salmon habitat from sedimentation would be *minimized. Design features would be used to reduce possible sediment delivery during culvert and stream crossing work.*

4.2.1f Cumulative Effects on the Spring Chinook Salmon

The cumulative effects analysis for the proposed actions was considered with other foreseeable future actions including road decommissioning/culvert repair and trail repair efforts, *and ongoing actions such as continued unauthorized trail construction and continued use of other existing trails.* Cumulative effects at the project analysis area level would show a general decrease in fine sized sediment materials *reaching stream systems from trail repair efforts, road decommissioning and culvert repairs.* The streambed material size distribution would increase at localized areas along streams near channel crossing structures resulting in a relative increase in sizes larger than sand. Effects at the Mohawk Watershed area level would be very difficult to measure but any incremental decrease in fine sediment reaching streams could increase overall habitat quality.

Continued unauthorized trail construction and continued use of other existing trails could increase sedimentation at localized sites. These actions could reduce or mask the benefits gained at the project area level from trail repair efforts, road decommissioning, and culvert repairs.

4.2.2 Alternative II: Minimal Trail Use Modification (No Action)

4.2.2a Direct and Indirect Effects on the Bald Eagle

Use of motorized and non-motorized recreational vehicles would continue to be unmanaged, and trails would continue to be unmaintained. Currently, the graveled BLM road bordering Area K of the Coburg Hills BEHA is used by motorized vehicles (both recreational and non-recreational) throughout the year. Since suitable nesting habitat is not present and eagles are not currently roosting within Area K of the Coburg Hills BEHA or within 0.25 mile of the trails and roads currently being used by OHVs, bald eagles are not being negatively impacted by vehicular noise disturbance.

If bald eagles begin using Area K of the BEHA as a winter roost at some point in the future, OHV use could disturb bald eagles during the wintering period (Nov. 15 - March 15). This effect could be reduced because the road bordering Area K is currently subject to disturbance from vehicles and the trail adjacent to this road is not visible to eagles potentially utilizing Area K for roosting. If new user-defined trails are created near other portions of the Coburg Hills BEHA that are known roosting sites, then roosting Bald Eagles probably would be affected by OHV use.

The roads and trails currently used by OHVs do not have suitable bald eagle habitat within 0.25 mile, thus continued use by OHVs would

not effect bald eagles.

4.2.2b Cumulative Effects on the Bald Eagle

Same as those described under Alternative I (see Section 4.2.1b).

4.2.2c Direct and Indirect Effects on the Northern Spotted Owl

The continued use of paved and graveled roads and native-surface trails within 0.25 mile of suitable spotted owl habitat would directly affect spotted owls due to disturbance if the owls were nesting. Since owl surveys currently are not conducted or required in suitable habitat within 0.25 mile of the network of roads and trails presently used by OHVs, there is the potential that unidentified nesting spotted owls *could* be disturbed by vehicle noise. Impacts would be greatest during the critical nesting period (March 1 - July 15) and could cause a nesting attempt to fail.

The creation and use of new user-defined trails within 0.25 mile of suitable spotted owl habitat could disturb nesting spotted owls. Since owl surveys would not be conducted in suitable habitat within 0.25 mile of future trails that may be created and used by OHV enthusiasts, there is potential that unidentified nesting spotted owls could be disturbed by vehicle noise.

Current use by OHVs in the Shotgun area is not modifying the 82 acres of suitable spotted owl nesting habitat within 0.25 mile of the existing roads and trails thus there would be no indirect effect to owls due to habitat modification.

4.2.2d Cumulative Effects on the Northern Spotted Owl

Same as those described under Alternative I (see Section 4.2.1d).

4.2.2e Direct and Indirect Effects on Spring Chinook Salmon

No direct effects are anticipated under this alternative. Spring chinook habitat is at least 1.25 miles downstream from any stream crossing activities.

Indirectly, fine sediments would continue to enter stream channels via the proposed 27 mile network. The distance of the stream crossings on the proposed trail system from potential salmon habitat would be sufficient to preclude direct sediment input to salmon bearing stream reaches.

4.2.2f Cumulative Effects on the Spring Chinook Salmon

The effects would be similar to Alternative I with the difference being a smaller overall decrease in fine sediment due to road decommissioning and culvert repair actions exclusively. Reduction of fine sediment emanating from the trail system would not be reduced. Continued trail use and possible unauthorized trail construction may offset any reductions in fine sediment gained from road and culvert actions.

4.2.3 Alternative III: Agency Trail Management, Dual-Track Construction

The direct, indirect, and cumulative effects described under Alternative I (see Section 4.2.1) would apply under Alternative III.

4.3 Effects on ACS (Issue 2)

4.3.1 Alternative I: Agency Trail Management, Single-Track Construction

4.3.1a Direct and Indirect Effects on BLM's Ability to Attain ACS Objectives

Objective 1: The proposed action would contribute to the restoration of the distribution, diversity, and complexity of watershed and landscape-scale features needed to ensure protection of aquatic systems by constructing bridges at trail-stream crossings, conversion of selected roads to single-track trails, re-routing or new construction of trail segments designed to eliminate and rehabilitate resource problem areas, and the establishment of a trail maintenance plan. Approximately 4-9 bridges would be constructed spanning perennial, intermittent, and ephemeral streams. Bridges over stream crossings would reduce aquatic habitat destruction by removing vehicles from the streams and adjacent banks and essentially eliminating trail sediment input at existing drive through crossings. Road to trail conversion would include a reduction in travel width (to about 3 feet) and may include removal of

approximately 5 culverts across intermittent and ephemeral streams. Trail conversion and a narrowing of the travel width would reduce erosion and sedimentation by promoting vegetation establishment along the unused portions of the converted road prism. Culvert removal would include the construction of bridges and would allow for the restoration of natural hydrologic flow patterns by removing constricting road fills and would also promote the reestablishment of riparian vegetation. Re-routing of trail segments causing or contributing to resource impacts which cannot be reduced to acceptable levels would result in an overall reduction in sediment reaching aquatic systems and would promote the restoration of habitat by reestablishing vegetative cover. A comprehensive trail maintenance plan would include periodic inspections of stream crossings and an overall determination of trail condition. Trail maintenance would be scheduled in response to condition surveys with actions designed to alleviate problems as they arise or in anticipation of future concerns.

Objective 2: The proposed action would maintain the spatial and temporal connectivity within and between watersheds. No barriers to aquatic species or related biota are known to occur along or immediately adjacent to the proposed trail route.

Objective 3: The proposed action would contribute to the restoration of the physical integrity of the aquatic system by constructing bridges across streams, removal of culverts and road fill along trail conversion roads, routing trails away from riparian areas and streams, and by performing preventative and

remedial maintenance activities. Bridges would greatly reduce or eliminate disturbance to streambanks and allow potentially soil stabilizing vegetation to establish and take hold. Removal of road fill and rehabilitation of streambanks associated with culverts along trail conversion candidate roads would establish stream bank stabilizing vegetation which would reduce or prevent sediment entering streams. Removal of vehicle access to streams and the reduction of sediment reaching streams by re-design and maintenance activities would reduce the disturbance of stream bottom materials and introduction of finer sized materials and would contribute to the restoration of a more natural streambed material size distribution.

Objective 4: The proposed action would contribute to the maintenance of the long-term and overall water quality levels necessary to support healthy aquatic and related ecosystems. Localized, short-term increases in turbidity could occur during bridge construction, culvert removal and site rehabilitation, or road to trail conversions. Minor amounts of sediment may enter streams resulting from activities associated with setting bridge sills and removal of culvert fills prior to rehabilitation of streambanks. Physically narrowing roads to single-track trails could release small amounts of sediment. All effects would be short-lived and unmeasurable.

Actions would not result in a reduction of canopy coverage or an increase in exposed bare ground around existing trail or proposed new trail segments. Stream and trail shading would not be changed

therefore, stream temperatures would not be altered.

Objective 5: The proposed action would contribute to the restoration of the sediment regime under which aquatic ecosystems evolved. Maintenance activities designed to buffer and retain sediment and reduce or eliminate sediment and water movement along trails, the overall change in sediment contributing area would result in a net reduction of total volume of fine sediment reaching streams. The timing, rate, storage, and transport of sediment would approach more natural circumstances with the elimination of direct paths of sedimentation along trails when combined with the longer retention time for fine sized materials on the uplands. ***Trail maintenance activities would minimize sediment input to streams. New trail construction would not intersect streams.***

Objective 6: The proposed action would not prevent or retard the maintenance of in-stream flow patterns. Approximately an additional 0.001 percent of the total project area land base would be disturbed by the proposed actions and would have no anticipated affect on the timing, magnitude, or duration of flows or to a change in the distribution of peak, high, or low flows.

Objective 7: The proposed action would not prevent or retard the maintenance of the timing, variability, and duration of flood plain inundation and watertable elevation in meadows and wetlands. No portion of the proposed trail lies within or immediately adjacent to a wetland. No new trail construction is proposed within riparian areas. Existing trail segments within riparian reserves have no affect on flood patterns or water table

elevation.

Objective 8: The proposed action would contribute to the restoration of species composition and structural diversity of plant communities in riparian areas and wetlands. Short-term loss of individual plants or habitat would occur during culvert fill removal. However, plant communities and associated habitat would re-establish in time and would provide sediment and nutrient filtering capacity, streambank stability, and more natural channel migration routes. A minimal, short-term removal of thermal cover vegetation could occur during culvert removal and trail rehabilitation and construction but would recover quickly. Bridge crossings would keep vehicles out of the streams and off streambanks, thus providing protection for streamside vegetation and a reduction in sediment input. Re-routing trails away from degraded areas near streams would promote the restoration of vegetation communities which would lead to reduced sediment delivery to streams and an increase in nutrient filtering capability. The proposed action would have no effect on existing or recruitable coarse woody debris or on dependent species. Large materials would be minimally disturbed, if at all, and retained on site.

Objective 9: The proposed action would maintain habitat needed to support well-distributed populations of native plant, invertebrate, and vertebrate riparian dependent species. The loss of individual plants and habitat would result from culvert removal operations but recovery of habitat would occur over time. New trail construction would have no affect on riparian plants since no new construction would occur in riparian areas. The temporary

displacement or loss of riparian dependent vertebrate or invertebrate species may occur during culvert removal or trail maintenance activities but would not affect the long-term viability of populations. Trail use could adversely affect individual vertebrates or localized populations. Restoration of riparian plant communities during culvert removal and site rehabilitation, and protection of vegetation by bridge construction would support the distribution of native plant and animal species.

4.3.1b Cumulative Effects on BLM's Ability to Attain ACS Objectives

The cumulative effects from the proposed actions when considered together with past, present, and foreseeable future actions on private and public lands at the watershed scale are unquantifiable in the sense of representing exactly how much of a change would occur. The unknown state of aquatic ecosystems on private land and the scale of the proposed actions with respect to the Mohawk River scale analysis area makes predictions concerning possible impacts nearly impossible. Aquatic ecosystems at the localized project area scale would benefit from the decrease in sediment reaching streams and from the protection and reestablishment of streamside vegetation. Enhanced streambank stability and reduction of fine sediment reaching aquatic systems would result in beneficial effects to stream, streamside, and upland habitats immediately adjacent to or downstream of the proposed actions. The proposed actions would have incremental effects on the condition of aquatic ecosystems at the Shotgun Creek analysis area but would not lead to any measurable changes in overall

aquatic condition at such a scale.

Potential future actions including road decommissioning/culvert repair and remedial trail work outside of the proposed segments would assist in the overall trend of reducing fine sediment in streams and increasing aquatic habitat condition at all analysis area levels.

Trail use along segments outside of those identified as part of the proposed action would continue. Effects resulting from un-managed trails would not change until such time that remedial action or future trail maintenance was *accomplished*.

Continued unauthorized trail construction would introduce sediment into streams and could affect stream bank integrity. This would reduce the benefits gained by implementing the proposed action and any future projects such as road decommissioning, culvert repairs, and trail repairs.

4.3.2 Alternative II: Minimal Trail Use Modification (No Action)

4.3.2a Direct and Indirect Effects on BLM's Ability to Attain ACS Objectives

Objective 1: Alternative II would not contribute toward the maintenance or restoration of the distribution, diversity, and complexity needed to ensure protection of aquatic ecosystems. Trail system use would continue in an un-managed state. A reduction in overall habitat condition could occur as trail use continues to grow and

new unauthorized trails developed.

Objective 2: No change to movement of species within and between watersheds would occur unless unabated trail use grows to such a level that trails become physical or chemical barriers to species movement.

Objective 3: Alternative II would not lead to the maintenance or restoration of the physical integrity of aquatic systems. Existing stream crossings would continue to be used and new crossings could be created by users as they saw the opportunity. Stream crossings would include a mixture of simple elevated structures and drive-through or unimproved crossings. Streambanks, bottoms, and channels would degrade as use expands throughout the trail system either directly or by mechanical disturbance at crossings or indirectly as bank stabilizing vegetation is damaged and eventually lost. Unabated trail use in riparian areas would continue.

Objective 4: Water quality necessary to support healthy aquatic ecosystems would not be maintained at current level or be restored. Overall trail mileage would increase as problem segments are abandoned by users and new trails pioneered as replacements. Existing trails would continue to degrade. Sediment production and direct input to streams would continue in higher amounts and at a greater rate. Road-to-trail conversions would not be initiated and the removal or replacement of culverts along such roads would be handled as a road maintenance concern.

Objective 5: The sediment regime under

which the aquatic ecosystems evolved may change. Continued and unrestricted use of trails throughout the project area could lead to an overall reduction in the size of sediment reaching streams. More sand and smaller sized materials could change the volume, rate, and character of sediment reaching streams. Trail use with unauthorized additions to overall trail mileage could further change the timing, storage, and transport of sediment.

Objective 6: If the general trend and rate of trail mileage increase does not change beyond anticipated levels, no change in stream flow characteristics would occur.

Objective 7: No change in the timing, variability, and duration of flood plain or water table characteristics would occur.

Objective 8: Restoration of species composition or structural diversity in riparian zones or wetlands would not occur. Individuals and populations of plants and animals could be further impacted as habitat continued to deteriorate as a result of unrestricted use and un-managed trail use.

Objective 9: The distribution of plant and animal species would not be restored. Plant and animal species distribution could be further impacted as un-managed trail use increases and effects to individuals and populations grow.

4.3.2b Cumulative Effects on BLM's Ability to Attain ACS Objectives

The effects would be similar to Alternative 1 except there would be no benefits to the

aquatic systems from implementing the proposed actions. Potential future actions such as road decommissioning, culvert repairs, and trail repairs would assist in the attainment of the ACS objectives, but the overall benefits would be less than Alternative 1.

4.3.3 Alternative III: Agency Trail Management, Dual-Track Construction

4.3.3a Direct and Indirect Effects on BLM's Ability to Attain ACS Objectives

Same as those described under Alternative I (see Section 4.3.1b).

4.3.3b Cumulative Effects on BLM's Ability to Attain ACS Objectives

Same as those described under Alternative I (see Section 4.3.1b).

4.4 Effects on Recreation (Issues 3, 4, and 5)

4.4.1 Alternative I: Agency Trail Management, Single-Track Construction (Proposed Action)

4.4.1a Direct and Indirect Effects on Visitor Safety (Issue 3)

Trail designation, construction, and maintenance described under Alternative I would have a positive effect upon the safety of trail recreationists. This is particularly true for off-road motorcyclists who would benefit mostly from a designated system of roads and trails geared primarily toward their mode of travel.

Trail designation would be the basis for on-site directional signing that would prevent visitors from getting lost. It would further spur development of additional mediums in the form of visitor maps, brochures, sign board postings, flyers, and electronic publishings; these would aid visitors when used to announce trail-related conditions (e.g., grades, distances, hazards, closures, etc.). The availability of this type of information would enable trail users to better determine their preparedness to safely enjoy a managed, trail recreation opportunity.

The actions described above emphasizing management of a system of roads and trails for recreational enjoyment would target two types of trail users: (1) it would direct first-time visitors to a managed system that seeks to promote their safety, and (2) it would draw seasoned users away from other trails and roads within the project area not identified as part of the designated system.

Proposed trail maintenance actions would result in tread surface and clearance conditions that would minimize hazardous travel. Regular trail condition surveys would allow BLM to identify and correct problems before they pose greater safety hazards. Additionally, use of the best available and economically-feasible technologies, practices, and materials to correct

identified problems would protect trail users compared to historic maintenance actions.

Similar to maintenance actions proposed under this alternative, newly-constructed trails and trail features (e.g., water crossings) would be installed using the best available and economically feasible technologies, practices, and materials. Consequently, trail user safety would be improved under this new-construction premise.

4.4.1b Cumulative Effects on Visitor Safety (Issue 3)

Road and trail segments included within the proposed system would have clear management objectives to be considered when other management actions (e.g., timber harvest) are planned within the project area. With respect to user safety, one example involves the presence of timber harvest debris within, or immediately adjacent to, the designated travel corridor. Creating a possible hazard to unsuspecting visitors, this situation would be less likely to occur under Alternative I as a result of IDT consideration of the trail objectives during project scoping.

Trails within the project area that are not part of the proposed designated system would remain unsigned. User safety associated with those trails would not change from that described under Alternative II.

4.4.1c Direct and Indirect Effects on the User Experience (Issue 4)

Trail designation, construction, and maintenance described under Alternative I would have a positive effect upon the quality

of the user experience. This is particularly true for off-road motorcyclists who would mostly benefit from a designated system of roads and trails geared primarily toward their mode of travel.

Little modification to the physical landscape features that appeal to trail users is anticipated under Alternative I. ***This would be favored by visitors preferring a rustic recreation opportunity over one more urbanized.***

Site controls (e.g., signs, road barriers) proposed under this alternative would be an increase beyond those in existence and give the appearance of a managed recreation activity. This would diminish the experience quality of those who prefer a “hands off” management approach. However, by applying principles of design simplicity (e.g., size, color, materials, etc.), the added features would not noticeably detract from the surrounding natural environment.

The heightened management proposed under Alternative I would add greater legitimacy to trail recreation activity within the project area. This legitimacy--manifested in the form of a designated system of roads and trail--would enhance the quality of the trail users’ experience by freeing them from concerns of trespass, unaddressed resource impacts linked to their activity, etc.

An agreed-upon system of trails and roads for trail recreation would serve as the basis for increased cooperation between BLM and involved private landowners. Independent actions taken by private

landowners to close trails or eliminate trail access along the proposed trail network would be less likely under Alternative I.

4.4.1d Cumulative Effects on the User Experience (Issue 4)

Under Alternative I, a base, 27-mile trail opportunity would be enhanced through implementation of additional road-to-trail conversions recommended within the project area. Linked to reasonably foreseeable trail designation planning beyond that analyzed under this EA, these added trail miles would support a key factor in managing a quality trail opportunity.

Continued use of non-designated trails would also support the mileage aspect of a quality trail experience. Potential closure of any of these trails as a result of future trail planning is unknown.

4.4.1e Direct and Indirect Effects on Different User Groups (Issue 5)

Alternative I would allow continued motorized and non-motorized trail recreation within the project area. However, for a total distance of less than 1.5 miles, it would prevent 4WD use in 2 areas where that activity historically occurred. The first location would involve proposed road-to-trail conversion/tread width reduction of BLM Road 15-2-22 (T. 15 S., R. 2 W., Sections 21 and 22). The second location would involve proposed single-track trail construction limited to a tread width no greater than 24 inches (T. 15 S., R. 2 W., Section 26).

No reduction in known use of the proposed designated system by off-road motorcyclists, mountain bicyclists, nor equestrians is anticipated under this alternative.

User demand for a managed trail system that recognizes different motorized and non-motorized uses would be addressed under this alternative. Organized user group frustrations stemming from this previously unmet demand would decrease.

Non-trail recreationists would be minimally impacted under this alternative because the proposal focuses upon management of existing trail use on predominantly existing road and trail segments where trail activity is well established. The greatest impact to non-trail recreationists would likely occur where road-to-trail conversions are proposed. In which case, dual-track vehicle access linked to non-trail activities (e.g., camping, shooting, etc.) would be restricted to single-track vehicles or foot traffic.

4.4.1f Cumulative Effects on Different User Groups (Issue 5)

The reasonably foreseeable expansion of the proposed designated system through future trail planning efforts would conceivably benefit different trail user groups. Recognizing the multiple-use nature of trail recreation within the planning area, future trail planning would seek to expand trail recreation opportunities to meet different user group needs.

Future trail expansion would off set the following reduction of 4X4 mileage in T. 15 S., R. 2 W., Section 26: Approximately 0.25 mile of trail was blocked in 1999 to prevent 4X4 use between

BLM Roads 15-2-25.1 and 15-2-26.2

Additionally, during that same year, another known 4X4 route was blocked to prevent 4X4 use along approximately 0.5 mile of existing road that was reconstructed for timber harvest as part of the Crooked Shot Timber Sale.

Future road-to-trail conversions would further modify access by non-trail recreationists within corridors historically open to dual-track vehicles.

4.4.2 Alternative II: Minimal Trail Use Modification (No Action)

4.4.2a Direct and Indirect Effects on Visitor Safety (Issue 3)

This alternative would perpetuate an inherently risky recreational activity without benefit of planned safety features typical of managed trail recreation opportunities (e.g., directional signing, maps, routine trail maintenance, etc.). The resulting danger would be greatest for novice trail recreationists and/or visitors new to the project area. In which case, limited expertise, and/or trail location and terrain unfamiliarity would pose considerable safety hazards.

Trail users would continue implementing rudimentary trail maintenance on popular trails where tread is deteriorating. Lacking good design and/or materials, these well-intentioned actions could pose increased safety hazards to trail users (e.g., insufficient load capacity *at water crossings*).

4.4.2b Cumulative Effects on Visitor Safety (Issue 3)

This alternative would not focus BLM attention on trail recreation occurring within the planning boundary. Consequently, in the absence of a designated system of roads and trails managed for public recreational use, *minimal attention devoted to potential effects upon trail user safety would result.*

4.4.2c Direct and Indirect Effects Upon the User Experience (Issue 4)

Trail recreation would continue under this alternative. Trail users would keep creating their own trail opportunities, largely without BLM involvement (e.g., construction of user-developed trails, but no road-to-trail conversions).

The limited management emphasis directed toward trail recreation under this alternative would satisfy some trail users who prefer little management presence and interaction. Conversely, visitors *preferring a signed and managed trail system* would not be satisfied under this alternative.

Cooperation between the BLM and involved private landowners for the purpose of providing a supported trail recreation opportunity would not be enhanced under this alternative. Lacking a defined, agreed-upon system of trails to jointly focus upon, independent actions taken by private landowners (e.g., trail closures, eliminated access, etc.) could considerably diminish the quality of the trail user experience when implemented without consideration given to trail recreation impacts and alternatives.

4.4.2d Cumulative Effects Upon the User Experience (Issue 4)

Lacking active BLM management and having limited private landowner support, trail recreation opportunities within the project area—especially involving motorized use—would run an increasingly higher risk of being eliminated because of *unacceptable* impacts to the surrounding natural *resources*. Where visitors would attempt to have a trail experience under this scenario, it would not be fulfilling to the degree that their focus would be directed toward not getting caught conducting that activity.

4.4.2e Direct and Indirect Effects On Different User Groups (Issue 5)

User-developed, multiple-use trail recreation would continue under Alternative II except where trail closures would be implemented *by private landowners* (see Section 4.4.2c, Cumulative Effects on the User Experience).

User demand for a managed trail system would not be met. Organized user group frustrations stemming from this unmet demand would increase.

Dual-track access by non-trail recreationists would not be impacted under this alternative.

4.4.2f Cumulative Effects on Different User Groups (Issue 5)

Reasonably foreseeable trail and road closures on private lands to restrict 4X4 access would

further decrease trail mileage available to dual-track vehicles when added to 1999 BLM actions taken to restrict 4X4 access (see Section 4.4.1f)

4.4.3 Alternative III: Agency Trail Management, Dual-Track Construction

The direct, indirect, and cumulative effects described under Alternative I (see Section 4.4.1) would apply under Alternative III with the following exception specific to BLM Road 15-2-22: (1) 4WD use would continue, and (2) dual-track access by non-trail recreationists would remain available.

4.5 Effects on Other Resources

The following are either not present or would not be affected by any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, floodplains, cultural resources, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, minority populations, and low-income populations.

5.0 List of Preparers

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6.0 List of Agencies and Persons Consulted

This Environmental Analysis is being mailed out to the following members of the general public and organizations.

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Pam Hewitt
Charles & Reida Kimmel
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Carol Logan, Kalapooya Sacred Circle Alliance
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Oregon Dept. of Forestry, East Lane District
Oregon Natural Resources Council
The Pacific Rivers Council
John Poynter
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Roseburg Forest Products
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Sierra Club, Many Rivers Group
Swanson Superior Forest Products Inc.
Craig Tupper
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APPENDIX A

List of Acronyms

4WD	Four Wheel Drive
ACS	Aquatic Conservation Strategy
ATV	All Terrain Vehicle
BLM	Bureau of Land Management
EA	Environmental Assessment
ESA	Endangered Species Act
IDT	Interdisciplinary Team
LSR	Late Successional Reserve
MRA	McKenzie Resource Area
MRAMP	Mohawk Recreation Area Management Plan
NMFS	National Marine Fisheries Service
NFP	Northwest Forest Plan
OHV	Off Highway Vehicle
RMOP	Road Maintenance Operations Plan
RMP	Resource Management Plan
ROD	Record of Decision

S & M	Survey and Manage
SRP	Special Recreation Permit
T & E	Threatened and Endangered
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
TMP	Transportation Management Plan

APPENDIX B

Aquatic Conservation Strategy Objectives

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, up slope areas, headwater tributaries, and intact refugia. These lineages must provide chemically- and physically-unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain in the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which an aquatic ecosystem evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing (i.e., movement of woody debris through the aquatic system). The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration, and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

APPENDIX C

BLM Road Maintenance Levels

The following descriptions are adapted from the Western Oregon Transportation Management Plan (U.S. Department of the Interior 1996):

- Level I: This level is assigned to roads where minimum maintenance is required to protect adjacent lands and resource values. These roads are no longer needed and are closed to traffic. The objective is to remove these roads from the transportation system.
- Level II: This level is assigned to roads where the management objectives require the road to be opened for limited administrative traffic. Typically, these roads are passable by high clearance vehicles.
- Level III: This level is assigned to roads where management objectives require the road to be open seasonally or year-round for commercial, recreation, or administrative access. Typically, these roads are natural for aggregate surfaced, but may include low use bituminous surfaced road. These roads have a defined cross section with drainage structures (e.g., rolling dips, culverts, or ditches). These roads may be negotiated by passenger cars traveling at prudent speeds. User comfort and convenience are not considered a high priority.
- Level IV: This level is assigned to roads where management objectives require the road to be open all year (except may be closed or have limited access due to snow conditions) and which connect major administrative features (recreation sites, local road systems administrative sites, etc.) to County, State, or Federal roads. Typically these roads are single or double land, aggregate, or bituminous surface, with a higher volume of commercial and recreational traffic than administrative traffic.
- Level V: This level is assigned to roads where management objectives require the road to be open all year and are the highest traffic volume roads of the transportation system.

The Finding of No Significant Impact (FONSI) is not a decision document. Its purpose is to state that the actions proposed do not have a significant effect on the environment and that an EIS is not needed according to information contained in the EA and other available information. The unsigned FONSI is sent out with the EA to let you know that we feel that our actions do not warrant an EIS.

UNITED STATES DEPARTMENT OF THE INTERIOR 1792A
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT

EA-00-4
Shotgun Trails

Preliminary Finding of No Significant Impact Shotgun Trails Project - EA OR 090-00-04

The Interdisciplinary Team for the McKenzie Resource Area, Eugene District, Bureau of Land Management has completed an Environmental Assessment (EA) and analyzed a proposal to manage a 27-mile loop system of mostly existing roads and trails within the Shotgun Drainage for motorized recreational use. The proposal would be done in compliance with the Standards and Guidelines of the Record of Decision (ROD) for the Forest Plan.

The system would be signed and regularly maintained. New single-track trail construction of less than one mile would be implemented. Road-to-trail conversions totaling approximately four miles would be implemented. Single-track stream crossing would be constructed along the proposed loop system where trails currently do, or would, intersect stream crossings.

The Proposed Action and alternatives *II* and *III* are described in the attached Shotgun Trails Environmental Assessment (OR090-EA-00-4). Anticipated impacts to the environment will not be significant. The Proposed Action and alternatives are in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl* (April 1994), and the *Eugene District Record of Decision and Resource Management Plan* (June 1995).

The anticipated environmental effects contained in this EA are based on research, professional judgement, and experience of the Interdisciplinary (ID) team and Eugene District Resources staff. No significant adverse impacts are expected to: (1) Threatened or Endangered species, (2) Flood plains or Wetlands/Riparian areas, (3) Wilderness Values, (4) Areas of Critical Environmental Concern, (5) Cultural Resources, (6) Prime or unique Farmland, (7) Wild and Scenic Rivers, (8) Air Quality, (9) Native American Religious Concerns, (10) Hazardous or Solid Waste, (11) Environmental Justice and (12) Water Quality.

DETERMINATION

On the basis of information contained in the EA, and all other information available to me, it is my determination that the alternatives analyzed do not constitute a major Federal action affecting the quality of the human environment. Therefore, a new EIS or supplement to the existing EIS is unnecessary and would not be prepared for this proposal.

Approved by: _____
Field Manager, McKenzie Resource Area

Date: _____